REMARKS

Claims 1-103 are pending in the present application. The Examiner has objected to the drawings and has rejected claims 1-103.

I.   OBJECTION TO THE DRAWINGS

The Examiner objected to the drawings as being informal. Applicants respectfully submit herewith a formal set of drawings. It is therefore respectfully requested that the objection be withdrawn with respect to the drawings.

II.   REJECTION UNDER 35 U.S.C. § 103(a) WITH RESPECT TO CLAIMS 1-103

Claims 1-103 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,118,811 ("Narumi") in view of U.S. Patent No. 6,175,279 B1 ("Ciccarelli"). Applicants respectfully traverse the rejection.

A.   Claims 1-17

Neither Narumi nor Ciccarelli, individually or combined, teaches or suggests each and every element as set forth in claim 1. For example, claim 1 recites "a current source coupled to the first component to generate a first parameter of the first component, and coupled to the second component to generate a second parameter of the second component". The Examiner has alleged that the first component is the mixer 150 of Narumi and that the second component is the signal processor 50 of Narumi. However, the Examiner acknowledges (and Applicants agree) that Narumi does not teach or suggest a current source coupled to a first component to generate a first parameter of the first component. In addition, Applicants respectfully submit that Narumi does not teach or suggest a current source coupled to a second component to generate a second parameter of the second component. Applicants have carefully reviewed the text and figures cited by the Examiner and respectfully submit that a current source coupled to the mixer 150 and the signal processor 50, as alleged by the Examiner, is not taught or suggested in any of citations including FIGS. 1-3 and 5; col. 1, line 65 to col. 2, line 10; col. 5, lines 17-59; col. 3, line 46 to col. 4, line 21; and col. 6, lines 9-67 of Narumi. In fact, Narumi is entirely silent as to the use of current sources at all.

Applicants respectfully submit that the failings in the teachings of Narumi are not made up by the teachings of Ciccarelli. Ciccarelli describes a low noise amplifier (LNA) 1220

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including a low noise radio frequency (RF) transistor 1540 with an emitter coupled to signal ground via an inductor 1542 and a current source 1580. The current source 1580 includes two MOSFETs 1582, 1584 with respective gate biases (i.e., respective gate voltages) that determine a collector bias current for transistor 1540. If the teachings of Ciccarelli are to be applied to teachings of Narumi as alleged by the Examiner, then the current source 1580 (or possibly the LNA 1220) of Ciccarelli would be coupled to the mixer 150 of Narumi. In coupling the current source 1580 of Ciccarelli to the mixer 150 of Narumi, for example, either (1) the current source 1580 becomes the third input to the mixer 150 or (2) the current source 1580 replaces an existing input 149, 151 of the mixer 150. Either arrangement is improper.

Neither Ciccarelli nor Narumi teaches or suggests a three-input mixer (e.g., coupling the current source 1580 as a third input to the mixer 150). Accordingly, such a configuration is not enabled by either Ciccarelli or Narumi, individually or combined. Furthermore, if the current source 1580 becomes the third input to the mixer 150, then the current source 1580 would add no additional function to the mixer 150 and, in this case, would unnecessarily increase current consumption. This is in direct contradiction to the Examiner's reason for combining Ciccarelli with Narumi which is to provide performance at a reduced current consumption. Thus, the combination is improper because it teaches away from the teachings of Ciccarelli. See, e.g., M.P.E.P. § 2145(X)(D)(2) ("[i]t is improper to combine references where the references teach away from their combination").

On the other hand, if the current source 1580 replaces an existing input 149, 151 of the mixer 150, then the proposed modification would impermissibly render Narumi unsatisfactory for its intended purpose. The mixer 150 mixes calibrated transmitted signals 149 from the transmitter 22 with a mixing signal 151 from the local oscillator 106 to generate receiver calibration signals. By replacing either input 149, 151 with the current source 1580, the mixer 150 would no longer generate the receiver calibration signals. Accordingly, the proposed modification would render the self-calibrating, self-correcting transceiver 20 of Narumi unsatisfactory for its intended purpose since, for example, the transceiver 20 would be unable to self-calibrate or self-correct its receiver 24. Thus, the proposed modification is improper. See, e.g., M.P.E.P. § 2143.02 ("the proposed modification cannot render the prior art unsatisfactory for its intended purpose").

Furthermore, neither Ciccarelli nor Narumi teaches or suggests a current source coupled to a second component to generate a second parameter of the second component. Ciccarelli and Narumi are silent as to a current source coupled to the signal processor 50 of Narumi (i.e., the second component as alleged by the Examiner).

In a subsequent Office Action, if necessary, Applicants respectfully request that, in order to satisfy the standard of *prima facie* obviousness, the Examiner identify, with particularity, the first parameter of the first component and the second parameter of the second component.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 1 and its dependent claims (i.e., claims 2-17).

Furthermore, Applicants respectfully submit that, even if proper (which Applicants dispute), the combination of Narumi and Ciccarelli does not teach or suggest each and every element as set forth in claims 2-17. For example, claim 2 recites that the current source provides a second current to the second component. The Examiner alleges that the second component is the signal processor 50 of Narumi. None of the citations provided by the Examiner nor the modifications in light of Ciccarelli teaches or suggests a current source providing a current to the signal processor 50 (according to the Examiner's interpretation) or modifying the signal processor 50 to meet the elements as set forth in claim 2. In another example, claim 3 recites that the first current is substantially equal to the second current. In support of the rejection of claim 3, the Examiner cites col. 4, lines 1-32 of Narumi which is silent as to substantially equal currents being sent to the mixer 150 and the signal processor 50 (i.e., the first component and the second component, respectively, as alleged by the Examiner). In fact, the citations provided by the Examiner and modifications in light of Ciccarelli make no mention of substantially equal currents at all. In yet another example, claim 4 recites a current source comprising a current mirror having a first output coupled to the a first component and a second output coupled to the second component. In support of the rejection of claim 4, the Examiner cites FIGS. 1-3 and 5; col. 3, lines 24-45; and col. 5, lines 30-55 of Narumi. However, the citations provided by the Examiner and the modifications in light of Ciccarelli do not teach or suggest a current mirror at all.

In another example, claims 7 recites that the first component comprises a resistor. The Examiner alleges that the first component is the mixer 150 of Narumi. However, neither Narumi

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nor Ciccarelli teaches or suggests a mixer comprising a resistor. Ciccarelli merely teaches a low noise amplifier (LNA) 1220 that comprises resistors 1518, 1520, 1534. However, the modification, according to the Examiner's interpretation of Ciccarelli and claim 1, is to couple the current source 1580 (or possibly the LNA 1120) of Ciccarelli to the mixer 150 of Narumi. Thus, the mixer 150 of Narumi is coupled to a device (e.g., the current source 1580 or the LNA 1120) that comprises a resistor, but Ciccarelli and Narumi does not teach or suggest a mixer 150 comprising a resistor.

In yet another example, claims 8-10 and 12-14 recite that the second component comprises one or more of the following: a second resistor; a tunable resistor array; a plurality of resistors coupled in series; a plurality of switches each being coupled across a different one of said plurality of resistors; a capacitor; a tunable capacitor array; a plurality of capacitors coupled in parallel; and a plurality of switches each being coupled in series to a different one of the capacitors. The Examiner alleges that the second component is the signal processor 50 of Narumi. However, neither Narumi nor Ciccarelli teaches or suggests a signal processor comprising any of the above-listed elements. Ciccarelli merely teaches a low noise amplifier (LNA) 1220 that comprises resistors 1518, 1520, 1534. However, the modification, according to the Examiner's interpretation of Ciccarelli and claim 1, is to couple the current source 1580 (or possibly the LNA 1120) of Ciccarelli to the signal processor 50 of Narumi. Thus, the signal processor 50 of Narumi may be coupled to a device (e.g., the current source 1580 or the LNA 1120) that comprises, for example, a resistor, but Ciccarelli and Narumi does not teach or suggest a signal processor 50 comprising a resistor (or any of the above-listed elements).

For at least the above reasons, it is respectfully requested that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 1 and its dependent claims (i.e., claims 2-17).

B.   Claims 18-37

Neither Narumi nor Ciccarelli, individually or combined, teaches or suggests each and every element as set forth in claim 18. For example, claim 18 recites "generating means for generating a first parameter of the first component, and a second parameter of the second component". Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 18 as were used in support of the rejection of claim 1, Applicants respectfully

make the same or similar arguments in traversing the rejection of claim 18 as were made in traversing the rejection of claim 1.

Furthermore, Applicants respectfully submit that, even if proper (which Applicants dispute), the combination of Narumi and Ciccarelli does not teach or suggest each and every element as set forth in claims 19-37. Since the Examiner uses many of the same or similar arguments in support of the rejection of claims 19-37 as were used in support of the rejection of claims 2-17, Applicants respectfully make the same or similar arguments in traversing the rejection of claims 19-37 as were made in traversing the rejection of claim 2-17.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 18 and its dependent claims (i.e., claims 19-37).

C.   Claims 38-49

Neither Narumi nor Ciccarelli, individually or combined, teaches or suggests each and every element as set forth in claim 38. For example, claim 38 recites:

> a current source;
> a first component coupled to the current source through a first
> node;
> a digitally tunable second component coupled to the current source
> through a second node ....

Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 38 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 38 as were made in traversing the rejection of claim 1.

Furthermore, Applicants respectfully submit that, even if proper (which Applicants dispute), the combination of Narumi and Ciccarelli does not teach or suggest each and every element as set forth in claims 39-49. Since the Examiner uses many of the same or similar arguments in support of the rejection of claims 39-49 as were used in support of the rejection of claims 2-17, Applicants respectfully make the same or similar arguments in traversing the rejection of claims 39-49 as were made in traversing the rejection of claim 2-17.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 38 and its dependent claims (i.e., claims 39-49).

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D. Claims 50-74

Neither Narumi nor Ciccarelli, individually or combined, teaches or suggests each and every element as set forth in claim 50. For example, claim 50 recites "a calibration circuit comprising a first component, a digitally tunable second component, a current source coupled to the first component to generate a first parameter of the first component and coupled to the second component to generate a second parameter of the second component". Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 50 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 50 as were made in traversing the rejection of claim 1.

Furthermore, Applicants respectfully submit that, even if proper (which Applicants dispute), the combination of Narumi and Ciccarelli does not teach or suggest each and every element as set forth in claims 51-74. Since the Examiner uses many of the same or similar arguments in support of the rejection of claims 51-74 as were used in support of the rejection of claims 2-17, Applicants respectfully make the same or similar arguments in traversing the rejection of claims 51-74 as were made in traversing the rejection of claim 2-17.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 50 and its dependent claims (i.e., claims 51-74).

E. Claims 75-87

Neither Narumi nor Ciccarelli, individually or combined, teaches or suggests each and every element as set forth in claim 75. For example, claim 75 recites "a calibration circuit comprising a first component, a digitally tunable second component, a current source coupled to the first component to generate a first parameter of the first component and coupled to the second component to generate a second parameter of the second component". Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 75 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 75 as were made in traversing the rejection of claim 1.

In addition, claim 75 recites "a bandgap calibration circuit to generate a bandgap current substantially independent of temperature, the bandgap calibration circuit being responsive to the control output from the logic control block". Other than stating that Narumi does not disclose these elements, the Examiner does not address, with any particularity, the manner in which

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Ciccarelli teaches or suggests these elements. In fact, Ciccarelli does not specifically mention a bandgap calibration circuit, a bandgap current or a temperature. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has yet to be presented. In a subsequent office action, if necessary, the Examiner is respectfully requested to identify, with particularity, the components from Narumi or Ciccarelli that teach or suggest each and every element as set forth in claim 75.

Furthermore, Applicants respectfully submit that, even if proper (which Applicants dispute), the combination of Narumi and Ciccarelli does not teach or suggest each and every element as set forth in claims 76-87. Since the Examiner uses many of the same or similar arguments in support of the rejection of claims 76-87 as were used in support of the rejection of claims 2-17, Applicants respectfully make the same or similar arguments in traversing the rejection of claims 76-87 as were made in traversing the rejection of claim 2-17.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 75 and its dependent claims (i.e., claims 76-87).

F.   Claims 88-103

Neither Narumi nor Ciccarelli, individually or combined, teaches or suggests each and every element as set forth in claim 88. For example, claim 88 recites "generating means for generating a first parameter of the first component, and a second parameter of the second component". Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 88 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 88 as were made in traversing the rejection of claim 1.

Furthermore, Applicants respectfully submit that, even if proper (which Applicants dispute), the combination of Narumi and Ciccarelli does not teach or suggest each and every element as set forth in claims 89-103. Since the Examiner uses many of the same or similar arguments in support of the rejection of claims 89-103 as were used in support of the rejection of claims 2-17, Applicants respectfully make the same or similar arguments in traversing the rejection of claims 89-103 as were made in traversing the rejection of claim 2-17.

In addition, claims 102 and 103 recite a "bandgap current". Other than stating that Narumi does not disclose these elements, the Examiner does not address, with any particularity,

the manner in which Ciccarelli teaches or suggests these elements. In fact, Ciccarelli does not specifically mention a bandgap current. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has yet to be presented. In a subsequent office action, if necessary, the Examiner is respectfully requested to identify, with particularity, the components from Narumi or Ciccarelli that teach or suggest each and every element as set forth in claims 102 and 103.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 88 and its dependent claims (i.e., claims 89-103).

III.   CONCLUSION

In view of at least the foregoing, it is respectfully submitted that the pending claims 1-103 are in condition for allowance. Should anything remain in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the below-listed telephone number.

Please charge any required fees not paid herewith or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Dated: February 24, 2004   Respectfully submitted,

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